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**Economic Commission for Europe****Inland Transport Committee****Working Party on the Transport of Dangerous Goods****Joint Meeting of the RID Committee of Experts and the  
Working Party on the Transport of Dangerous Goods**

Geneva, 17-27 September 2013

Item 6 (b) of the provisional agenda

**Proposals for amendments to RID/ADR/ADN:  
new proposals****Amendment of the provisions relating to gas cartridges****Transmitted by the European Cylinder Makers Association (ECMA)<sup>1,2</sup>***Summary*

<b>Executive summary:</b>	The aim of this proposal is to improve the harmonisation of RID/ADR with the United Nations Model Regulations on the Transport of Dangerous Goods for gas cartridges and to amend the RID/ADR provisions to permit a wider range of gases.
<b>Action to be taken:</b>	Amend the text in 6.2.6.1 and the definition of gas cartridge
<b>Related documents:</b>	ST/SG/AC.10/C.3/2012/69; ST/SG/AC.10/40/Add.1 and ECE/TRANS/WP.15/AC.1/2013/31/Add.1 showing the changes to the provisions for gas cartridges proposed for the 2015 editions of RID and ADR.

<sup>1</sup> Conformément au programme de travail du Comité des transports intérieurs pour la période 2010-2014 (ECE/TRANS/208, par. 106, et ECE/TRANS/2010/8, activité 02.7 c)).

<sup>2</sup> Diffusée par l'Organisation intergouvernementale pour les transports internationaux ferroviaires sous la cote OTIF/RID/RC/2013/52.

## Introduction

1. CEN/TC23 – Transportable Gas Cylinders is preparing a standard for the construction of non-refillable, small transportable, steel cylinders of capacities up to and including 120ml containing compressed or liquefied gases. Such small cylinders are considered to be small receptacles containing gas (gas cartridges) i.e. UN 2037.
2. This standard has been proposed for referencing in RID/ADR and the Standards Working Group of the Joint Meeting has already reviewed the enquiry version prEN 16509. While the scope of the standard falls within the requirements for gas cartridges, the technical requirements of the standard do not comply with all the requirements of 6.2.6. This mismatch will be remedied to some extent when the text of the 18<sup>th</sup> revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations is adopted by RID/ADR. The revised edition extends the alternative to the water bath test already allowed for aerosols to gas cartridges. This paper proposes changes that would remove the other obstacles to the referencing of the above-mentioned standard.
3. The types of gas cartridge covered in the draft standard are used in a wide range of applications such as life saving appliances, medical devices and fire protection systems. Being filled with compressed or liquefied gases they provide a very reliable source of stored energy for safety devices as well a source of gas for inflation or to apply a small quantity of gas for its chemical properties. Because their use is so widespread, it is important that the standard should be accepted for reference and these small receptacles are explicitly covered by the RID/ADR.
4. The issues to be solved are:
  - (a) The definition of small receptacles containing gas (gas cartridge) conflicts Special Provision 191; and
  - (b) The requirements in 6.2.6.1.5 are appropriate for aerosols and certain low pressure liquefied gases, but are not appropriate for high pressure liquefied gases or compressed gases which are the usual gases filling the small receptacles described in the standard.

### I. Issue (a)

5. The definition for small receptacles containing gas (gas cartridge) includes the phrase “meeting the relevant requirements of 6.2.6”. This is not a description of the article, it is a requirement of the RID/ADR and is therefore inappropriate in a definition. Furthermore, Special Provision 191 states “Receptacles, small, with a capacity not exceeding 50 ml, containing only non-toxic constituents are not subject to the requirements of RID/ADR.” This contradicts the definition which requires universal conformity with 6.2.6. There is no necessity to include this reference in the definition since Table A contains Special Provision 344 which states “The provisions of 6.2.6 shall be met”.

### Proposal 1

6. Revise the definition in 1.2.1 as shown below:

*"Small receptacle containing gas (gas cartridge)"* means a non-refillable receptacle ~~meeting the relevant requirements of 6.2.6~~ containing, under pressure, a gas or a mixture of gases. It may be fitted with a valve;

7. ECMA recommends this simplification also because it upholds the rule practised in international standardisation that definitions do not contain requirements.

## II. Issue (b)

8. 6.2.6.1.5 requires that small receptacles are restricted to an internal pressure of 13.2 bar at 50 °C. Many low pressure liquefied gases such as propane have a vapour pressure in excess of 13.2 bar at 50 °C. Clearly compressed gases and high pressure liquefied gases carrying any useful quantity of the gas would also exceed this pressure. This requirement appears in the European Directive for Aerosols for which it is appropriate, but it is not appropriate for small receptacles, except ones containing gases with a very low vapour pressure e.g. butane.

9. The further requirement in 6.2.6.1.5 is that small receptacles "... shall be so filled that at 50 °C the liquid phase does not exceed 95% of their capacity." As a filling instruction, this partially mirrors the requirement in P200 (5) (c) for low pressure liquefied gases, but even for those it is not complete. It is also inappropriate for high pressure liquefied gases and meaningless for compressed gases.

10. ECMA proposes that the existing requirements of 6.2.6.1.5 be made specific to aerosols. The United Nations Model Regulations do not give filling instructions for small receptacles containing gas, but if a filling instruction is necessary, P200, which gives complete filling instructions for all gases, should be used.

### A. Proposal 2

11. Amend 6.2.6.1.5 as follows.

6.2.6.1.5 The internal pressure of aerosol dispensers at 50 °C shall exceed neither two-thirds of the test pressure nor 1.32 MPa (13.2 bar). ~~Aerosol dispensers and small receptacles containing gas (gas cartridges)~~ shall be so filled that at 50°C the liquid phase does not exceed 95% of their capacity.

### B. Proposal 3

12. Add the following sentence to the end of 6.2.6.1.5.

"Small receptacles containing gas (gas cartridges) shall meet the test pressure and filling requirements of P200."

## III. Justification

13. The revisions proposed would allow a much wider range of gases to be filled into small receptacles which are within the scope RID/ADR and remove an anomaly in the definition. The removal of the pressure limitation increases the harmonisation with the United Nations Model Regulations.